

**(12) UK Patent Application (19) GB (11) 2 044 298 A**

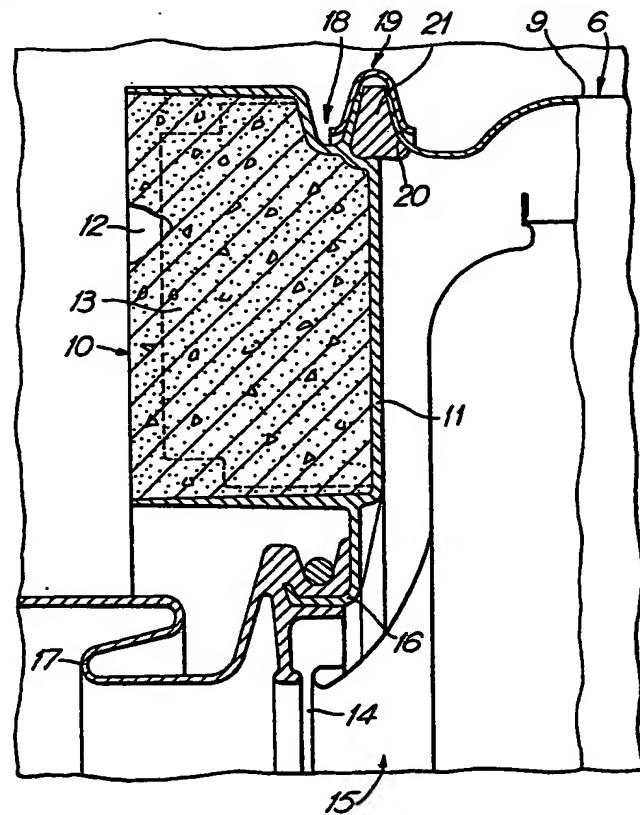
(21) Application No 8005188  
(22) Date of filing 15 Feb 1980  
(30) Priority data  
(31) 34010U  
(32) 5 Mar 1979  
(33) Italy (IT)  
(43) Application published  
15 Oct 1980  
(51) INT CL<sup>3</sup>  
D06F 37/26  
(52) Domestic classification  
D1A B2 D4 D5B1 D5B7C  
D6 F1A H2 H6  
(56) Documents cited  
None  
(58) Field of search  
D1A  
(71) Applicant  
Industrie Zanussi SpA.,  
Viale Treviso 15, 33170  
Pordenone, Italy  
(72) Inventor  
Dino Munini  
(74) Agent  
J. A. Kemp & Co.

**(54) Clothes Washing Machine With Ballasted Tub**

(57) In front-loading clothes washing machine, a tub has a cement ballast mass (13) mounted by means of a moulded plastics flange in the shape of a continuous hollow ring (11) of U-shaped section, which contains said

ballast mass, and a plurality of radial ribs disposed in association with the front open surface of said flange for the purpose of holding said ballast mass in position. The flange is also provided with a peripheral groove (18) into which a ring (19) can be inserted to grip said flange against the edge of the cylindrical body of the tub via a sealing means (21).

*Fig.2.*

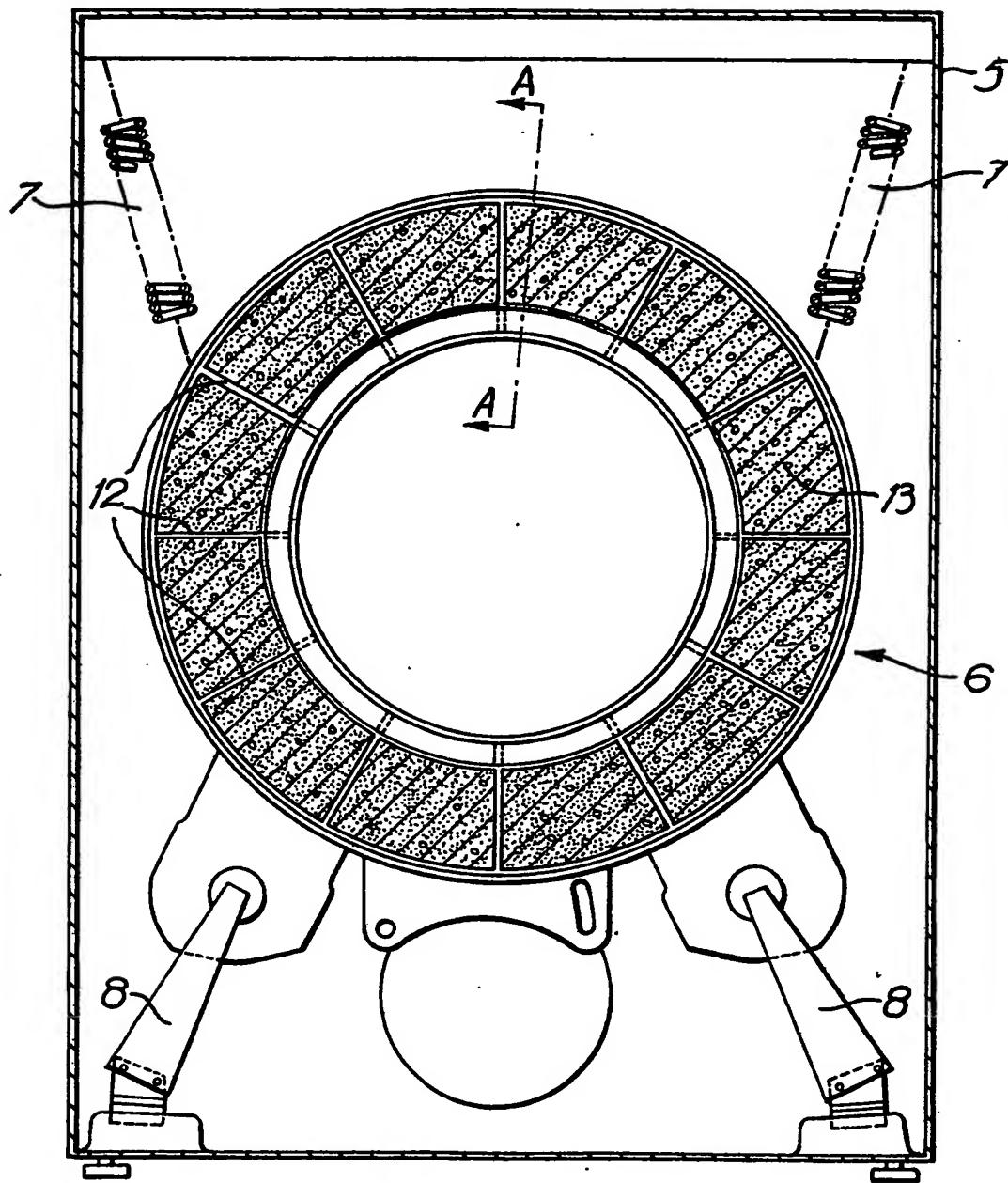


**GB 2 044 298 A**

6044698

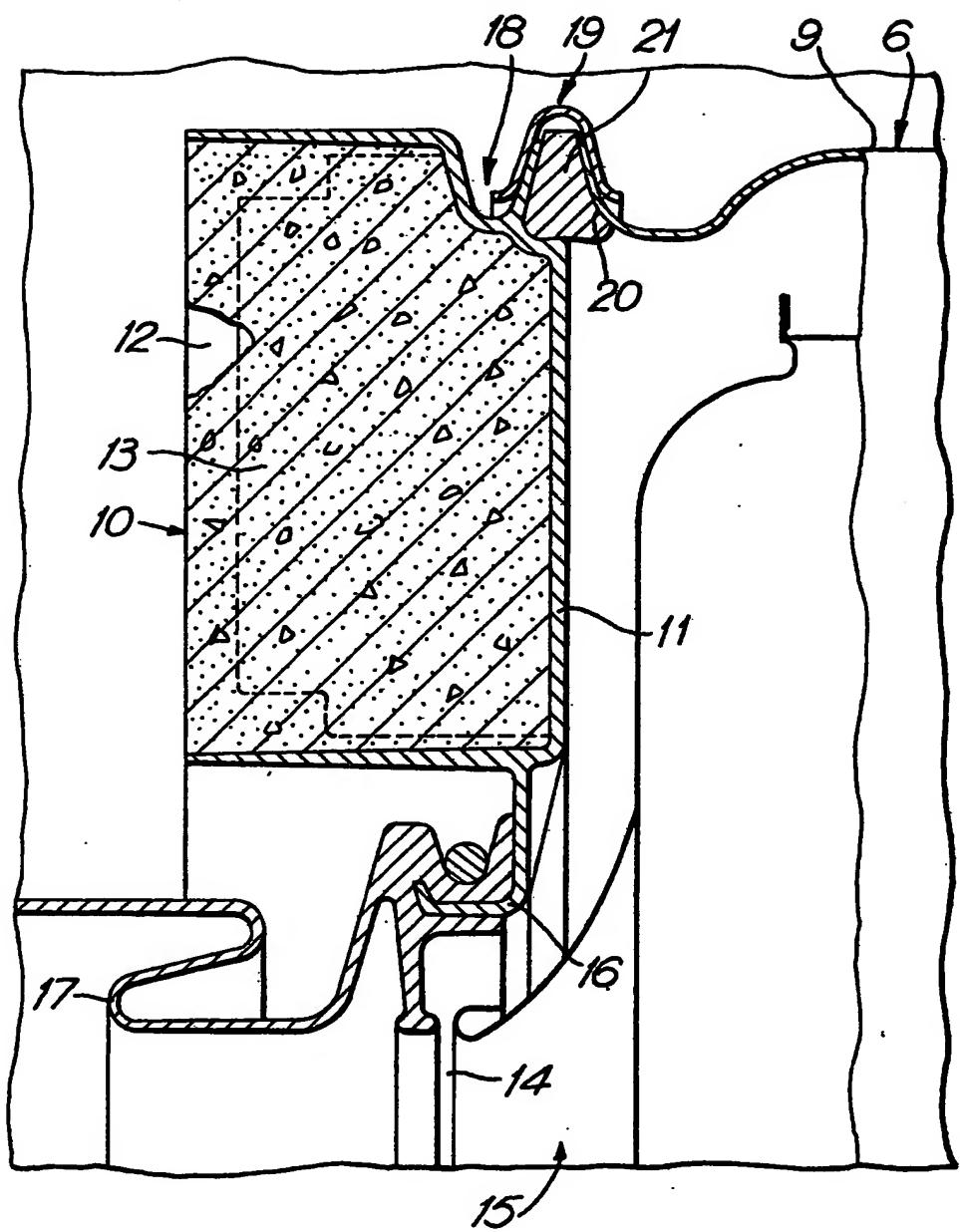
1/2

*Fig.1.*



22

Fig.2.



**SPECIFICATION****Clothes Washing Machine with Ballasted Tub**

The present invention relates to a front-loading clothes washing machine, in particular of domestic type, which is provided with a ballasted tub in order to increase the inertia force.

- 5 Various forms of ballasting arrangements are known for clothes washing machines. In one, the ballast is formed by a block of cement or heavy  
 10 masses of material, which are fixed to the front wall of the tub of the machine by means of removable members such as screws, nuts and washers. In another, a flange of metal or of plastics material is fixed in association with the  
 15 front wall of the tub, the flange being arranged to contain the counterbalancing weight for compensating for the forces to which the tub is subjected during rotation of the drum in the washing and spin phases. The flange acts as a  
 20 front wall for the tub and essentially comprises a plurality of members which co-operate with each other and which can be connected to the tub in *per se* known manner, each of said members being arranged to contain a counterbalancing mass.  
 25 However the resulting ballast is found to be complicated from the point of view of structure and consequently makes mounting of the tub difficult.

- According to the present invention there is  
 30 provided a front-loading washing machine, having a tub formed by a cylindrical body which can be closed by a front wall provided with an opening for access to the washing drum, and a cement ballast mass, said front wall comprising a  
 35 moulded plastics flange in the shape of a continuous hollow ring of U-shaped section, which is capable of containing said ballast mass, and a plurality of radial ribs disposed in association with the front open surface of said  
 40 flange for the purpose of holding said ballast mass in position, said flange also being provided with a peripheral groove into which a ring can be inserted to grip said flange against the edge of the cylindrical body of the tub, with the interposition  
 45 of a sealing means interposed.

The invention will be further described with reference to the accompanying drawings, in which:

- Figure 1 shows a diagrammatic front view of a  
 50 clothes washing machine embodying the present invention; and

Figure 2 shows a view on an enlarged scale of the machine of Figure 1, in partial section taken along line A—A.

- Referring to Figure 1, the illustrated clothes washing machine comprises a casing 5 in the interior of which is housed a tub 6 which is supported at the top by suspension springs 7 and which is provided at the bottom with damping means 8 of *per se* known type.

From the view shown in Figure 2, it will be

seen that the tub 6 comprises a cylindrical body 9 which is joined to the front wall 10 in a manner which will be described hereinafter.

- 65 The front wall 10 of the tub 6 essentially comprises a flange of moulded plastics material which is in the form of a hollow continuous ring 11 of U-shaped cross-section. A plurality of radial ribs 12 is provided integrally with the flange in  
 70 association with the outside surface of the above-mentioned flange 11.

In this way, the hollow ring 11 is capable of receiving the cement which serves as the ballast mass, as indicated at 13, while the radial ribs 12 serve to hold the ballast mass 13 in the ring 11, therefore preventing the ballast mass from coming out of its housing.

- 75 In practice, the cement is cast in the interior of the hollow ring 11, by filling the ring until the cement reaches the level of the outside surface of the radial ribs 12.

80 The above-described flange is also provided with a circular opening 14 associated with the opening 15 for access to the drum; the circular opening is provided with a raised edge portion 16 to permit connection of the flexible sleeve 17 of the door of the machine.

- 85 So that the above-described front wall 10 can be applied to the cylindrical body 9 of the tub 6, a  
 90 groove 18 is provided all along the outside circumference of the front wall 10. A locking ring 19 is inserted into the groove 18 and is clamped around the peripheral edge 20 of the cylindrical body 9, with the interposition of a sealing means  
 95 21. This arrangement thus simplifies the fixing of the ballast to the tub and at the same time provides a ballasted tub which is of simple construction and which is more convenient to use than the conventional ballasted tubs.

**100 Claims**

1. A front-loading clothes washing machine, having a tub formed by a cylindrical body which can be closed by a front wall provided with an opening for access to the washing drum, and a cement ballast mass, said front wall comprising a moulded plastic flange in the shape of a continuous hollow ring of U-shaped section, which is capable of containing said ballast mass, and a plurality of radial ribs disposed in association with the front open surface of said flange for the purpose of holding said ballast mass in position, said flange also being provided with a peripheral groove into which a ring can be inserted to grip said flange against the edge of the cylindrical body of the tub, with the interposition of a sealing means interposed.
- 105 2. A machine according to claim 1 wherein said flange is provided with a circular opening associated with said opening for access to the drum, which circular opening has a raised edge for connecting to a flexible sleeve of a door of the machine.
- 110 3. A machine according to claim 1 wherein said flange is provided with a circular opening associated with said opening for access to the drum, which circular opening has a raised edge for connecting to a flexible sleeve of a door of the machine.
- 115 4. A machine according to claim 1 wherein said flange is provided with a circular opening associated with said opening for access to the drum, which circular opening has a raised edge for connecting to a flexible sleeve of a door of the machine.
- 120 5. A machine according to claim 1 wherein said flange is provided with a circular opening associated with said opening for access to the drum, which circular opening has a raised edge for connecting to a flexible sleeve of a door of the machine.

3. A clothes washing machine constructed and  
arranged substantially as hereinbefore described

with reference to and as illustrated in the  
accompanying drawings.

Printed for Her Majesty's Stationery Office by the Courier Press, Leamington Spa, 1980. Published by the Patent Office,  
25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.